

CLAIMS

We claim:

1. A water based cold seal cohesive coating for bonding one or more substrates together to form a flexible package to contain an article, said cohesive coating comprised of the following components:

about 25% to about 90% by weight of a natural rubber latex emulsion;

5 about 10% to about 75% by weight of a non-self-crosslinking acrylic emulsion;

about 0.01% to about 10% by weight water; and

one or more ingredient selected from an anti-foam agent, ammonia, a surfactant, an anti-blocking agent, an inert filler, and a conditioning agent;

10 so that in combination the components total 100% by weight of said cohesive coating.

2. The cohesive coating of claim 1 wherein said anti-foam agent is selected from the group consisting of an emulsified silicone, a mineral oil based product and a glycol ester/polyol.

3. The cohesive coating of claim 1 wherein said anti-foam agent is a glycol ester/polyol.

4. The cohesive coating of claim 1 wherein said ammonia is selected from the group consisting of ammonium hydroxide and aqueous ammonia.

5. The cohesive coating of claim 1 wherein said surfactant is selected from the group consisting of a fatty acid ester, a nonionic ethoxylate and an anionic sulfosuccinate.

6. The cohesive coating of claim 1 wherein said surfactant is an anionic sulfosuccinate.

7. The cohesive coating of claim 1 wherein said anti-blocking agent is selected from the group consisting of fumed silica, clay and calcium carbonate.

8. The cohesive coating of claim 1 wherein said anti-blocking agent is fumed silica.

9. The cohesive coating of claim 1 wherein said coating contains about 0.01% to about 5% by weight of the anti-foam agent.

10. The cohesive coating of claim 1 wherein said coating contains about 0.01% to about 5% by weight of ammonia.

11. The cohesive coating of claim 1 wherein said coating contains about 0.01% to about 5% by weight of the surfactant.

12. The cohesive coating of claim 1 wherein said coating contains about 0.01% to about 5% by weight of the anti-blocking agent.

13. The cohesive coating of claim 1 wherein said non-self-crosslinking acrylic emulsion is selected from the group consisting of styrene acrylic, nitrile acrylic and all-acrylic.

14. The cohesive coating of claim 1 wherein said non-self-crosslinking acrylic emulsion is a styrene-acrylic emulsion.

15. A water based cold seal cohesive coating for bonding one or more substrates together to form a flexible package to contain an article, said cohesive coating comprised of the following components:

about 50% to about 90% by weight of a natural rubber latex emulsion;

5 about 10% to about 50% by weight of a non-self-crosslinking acrylic emulsion;

about 0.01% to about 10% by weight water; and

one or more ingredient selected from an anti-foam agent, ammonia, a surfactant, an anti-blocking agent, an inert filler, and a conditioning agent;

10 so that in combination the components total 100% by weight of said cohesive coating.

16. The cohesive coating of claim 15 wherein said anti-foam agent is selected from the group consisting of an emulsified silicone, a mineral oil based product and a glycol ester/polyol.

17. The cohesive coating of claim 15 wherein said anti-foam agent is a glycol ester/polyol.

18. The cohesive coating of claim 15 wherein said ammonia is selected from the group consisting of ammonium hydroxide and aqueous ammonia.

19. The cohesive coating of claim 15 wherein said surfactant is selected from the group consisting of a fatty acid ester, a nonionic ethoxylate and an anionic sulfosuccinate.

20. The cohesive coating of claim 15 wherein said surfactant is an anionic sulfosuccinate.

21. The cohesive coating of claim 15 wherein said anti-blocking agent is selected from the group consisting of fumed silica, clay and calcium carbonate.

22. The cohesive coating of claim 15 wherein said anti-blocking agent is fumed silica.

23. The cohesive coating of claim 15 wherein said coating contains about 0.01% to about 5% by weight of the anti-foam agent.

24. The cohesive coating of claim 15 wherein said coating contains about 0.01% to about 5% by weight of ammonia.

25. The cohesive coating of claim 15 wherein said coating contains about 0.01% to about 5% by weight of the surfactant.

26. The cohesive coating of claim 15 wherein said coating contains about 0.01% to about 5% by weight of the anti-blocking agent.

27. The cohesive coating of claim 15 wherein said non-self-crosslinking acrylic emulsion is selected from the group consisting of styrene acrylic, nitrile acrylic and all-acrylic.

28. The cohesive coating of claim 15 wherein said non-self-crosslinking acrylic emulsion is a styrene-acrylic emulsion.

29. A water based cold seal cohesive coating for bonding one or more substrates together to form a flexible package to contain an article, said cohesive coating comprised of the following components:

about 60% to about 80% by weight of a natural rubber latex emulsion;

5 about 20% to about 40% by weight of a non-self-crosslinking acrylic
emulsion;
 about 0.01% to about 10% by weight water; and
 one or more ingredient selected from an anti-foam agent, ammonia, a
surfactant, an anti-blocking agent, an inert filler, and a conditioning agent;
10 so that in combination the components total 100% by weight of said cohesive
coating.

30. The cohesive coating of claim 29 wherein said anti-foam agent is
selected from the group consisting of an emulsified silicone, a mineral oil based
product and a glycol ester/polyol.

31. The cohesive coating of claim 29 wherein said anti-foam agent is a
glycol ester/polyol.

32. The cohesive coating of claim 29 wherein said ammonia is selected
from the group consisting of ammonium hydroxide and aqueous ammonia.

33. The cohesive coating of claim 29 wherein said surfactant is selected
from the group consisting of a fatty acid ester, a nonionic ethoxylate and an anionic
sulfosuccinate.

34. The cohesive coating of claim 29 wherein said surfactant is an anionic
sulfosuccinate.

35. The cohesive coating of claim 29 wherein said anti-blocking agent is
selected from the group consisting of fumed silica, clay and calcium carbonate.

36. The cohesive coating of claim 29 wherein said anti-blocking agent is
fumed silica.

37. The cohesive coating of claim 29 wherein said coating contains about
0.01% to about 5% by weight of the anti-foam agent.

38. The cohesive coating of claim 29 wherein said coating contains about
0.01% to about 5% by weight of ammonia.

39. The cohesive coating of claim 29 wherein said coating contains about
0.01% to about 5% by weight of the surfactant.

40. The cohesive coating of claim 29 wherein said coating contains about 0.01% to about 5% by weight of the anti-blocking agent.

41. The cohesive coating of claim 29 wherein said non-self-crosslinking acrylic emulsion is selected from the group consisting of styrene acrylic, nitrile acrylic and all-acrylic.

42. The cohesive coating of claim 29 wherein said non-self-crosslinking acrylic emulsion is a styrene-acrylic emulsion.

43. A water based cold seal cohesive coating for bonding one or more substrates together to form a flexible package to contain an article, said cohesive coating comprised of the following components:

about 68% by weight of a natural rubber latex emulsion;

5 about 30% by weight of a non-self-crosslinking acrylic emulsion;

about 1.2% by weight water;

about 0.4% by weight of an anti-foam agent;

about 0.2% by weight of ammonia;

about 0.1% by weight of a surfactant; and

10 about 0.1% by weight of an anti-blocking agent.

44. The cohesive coating of claim 43 wherein said anti-foam agent is selected from the group consisting of an emulsified silicone, a mineral oil based product and a glycol ester/polyol.

45. The cohesive coating of claim 43 wherein said anti-foam agent is a glycol ester/polyol.

46. The cohesive coating of claim 43 wherein said ammonia is selected from the group consisting of ammonium hydroxide and aqueous ammonia.

47. The cohesive coating of claim 43 wherein said surfactant is selected from the group consisting of a fatty acid ester, a nonionic ethoxylate and an anionic sulfosuccinate.

48. The cohesive coating of claim 43 wherein said surfactant is an anionic sulfosuccinate.

49. The cohesive coating of claim 43 wherein said anti-blocking agent is selected from the group consisting of fumed silica, clay and calcium carbonate.

50. The cohesive coating of claim 43 wherein said anti-blocking agent is fumed silica.

51. The cohesive coating of claim 43 wherein said non-self-crosslinking acrylic emulsion is selected from the group consisting of styrene acrylic, nitrile acrylic and all-acrylic.

52. The cohesive coating of claim 43 wherein said non-self-crosslinking acrylic emulsion is a styrene-acrylic emulsion.

53. A flexible packaging material for containing a food article, comprising:
a substrate in the form of a flexible sheet of material having opposite longitudinal edges; and

5 a water based cold seal cohesive coating disposed on at least one of said longitudinal edges, said cohesive coating comprised of the following components:
about 25% to about 90% by weight of a natural rubber latex emulsion;
about 10% to about 75% by weight of a non-self-crosslinking acrylic emulsion;

10 about 0.01% to about 10% by weight water; and
one or more ingredient selected from an anti-foam agent, ammonia, a surfactant, an anti-blocking agent, an inert filler, a conditioning agent, and a stabilizer;

so that in combination the components total 100% by weight of said cohesive coating.

54. The flexible packaging material of claim 53 wherein said substrate is selected from the group consisting of a polyester film, a high density polyethylene film, a polypropylene film, a foil, a primed foil and a primed polyolefin film.

55. The flexible packaging material of claim 53 wherein said cohesive coating includes:

about 50% to about 90% by weight of the natural rubber latex emulsion; and

about 10% to about 50% by weight of the non-self-crosslinking acrylic
5 emulsion.

56. The flexible packaging material of claim 53 wherein said cohesive
coating includes:

about 60% to about 80% by weight of the natural rubber latex emulsion; and
about 20% to about 40% by weight of the non-self-crosslinking acrylic
5 emulsion.

57. The flexible packaging material of claim 53 wherein said cohesive
coating includes:

about 65% to about 70% by weight of the natural rubber latex emulsion; and
about 25% to about 35% by weight of the non-self-crosslinking acrylic
5 emulsion.

58. The flexible packaging material of claim 53 wherein said cohesive
coating comprises:

about 68% by weight of the natural rubber latex emulsion;
about 30% by weight of the non-self-crosslinking acrylic emulsion;
5 about 1.2% by weight water;
about 0.4% by weight of the anti-foam agent;
about 0.2% by weight of ammonia;
about 0.1% by weight of the surfactant; and
about 0.1% by weight of the anti-blocking agent.

59. The flexible packaging material of claim 53 wherein said anti-foam
agent is selected from the group consisting of an emulsified silicone, a mineral oil
based product and a glycol ester/polyol.

60. The flexible packaging material of claim 53 wherein said anti-foam
agent is a glycol ester/polyol.

61. The flexible packaging material of claim 53 wherein said ammonia is
selected from the group consisting of ammonium hydroxide and aqueous ammonia.

62. The flexible packaging material of claim 53 wherein said surfactant is selected from the group consisting of a fatty acid ester, a nonionic ethoxylate and an anionic sulfosuccinate.

63. The flexible packaging material of claim 53 wherein said surfactant is an anionic sulfosuccinate.

64. The flexible packaging material of claim 53 wherein said anti-blocking agent is selected from the group consisting of fumed silica, clay and calcium carbonate.

65. The flexible packaging material of claim 53 wherein said anti-blocking agent is fumed silica.

66. The cohesive coating of claim 53 wherein said coating contains about 0.01% to about 5% by weight of the anti-foam agent.

67. The cohesive coating of claim 53 wherein said coating contains about 0.01% to about 5% by weight of ammonia.

68. The cohesive coating of claim 53 wherein said coating contains about 0.01% to about 5% by weight of the surfactant.

69. The cohesive coating of claim 53 wherein said coating contains about 0.01% to about 5% by weight of the anti-blocking agent.

70. The flexible packaging material of claim 53 wherein said non-self-crosslinking acrylic emulsion is selected from the group consisting of styrene acrylic, nitrile acrylic and all-acrylic.

71. The flexible packaging material of claim 53 wherein said non-self-crosslinking acrylic emulsion is a styrene-acrylic emulsion.

72. A method of making a cold seal flexible package comprising the steps of:

applying a cold seal cohesive coating in accordance with claim 1 to selected areas of one side of a substrate in the form of a flexible sheet of material;

5 forming said substrate into a package; and

applying pressure to said selected areas to seal said package.

73. The method of claim 72 wherein the step of forming said substrate into a package comprises folding said substrate so that the cohesive coating on different portions of said selected areas of said substrate contact each other.

74. The method of claim 72 wherein the step of forming said substrate into a package comprises contacting different portions of said selected areas of the cohesive coating on said substrate with a separate substrate.

75. A method of making a cold seal flexible package comprising the steps of:

applying a cold seal cohesive coating in accordance with claim 15 to selected areas of one side of a substrate in the form of a flexible sheet of material;

5 forming said substrate into a package; and
applying pressure to said selected areas to seal said package.

76. The cohesive coating of claim 75 wherein the step of forming said substrate into a package comprises folding said substrate so that the cohesive coating on different portions of said selected areas of said substrate contact each other.

77. The cohesive coating of claim 75 wherein the step of forming said substrate into a package comprises contacting different portions of said selected areas of the cohesive coating on said substrate with a separate substrate.

78. A method of making a cold seal flexible package comprising the steps of:

applying a cold seal cohesive coating in accordance with claim 29 to selected areas of one side of a substrate in the form of a flexible sheet of material;

5 forming said substrate into a package; and
applying pressure to said selected areas to seal said package.

79. The method of claim 78 wherein the step of forming said substrate into a package comprises folding said substrate so that the cohesive coating on different portions of said selected areas of said substrate contact each other.

80. The method of claim 78 wherein the step of forming said substrate into a package comprises contacting different portions of said selected areas of the cohesive coating on said substrate with a separate substrate.

81. A method of making a cold seal flexible package comprising the steps of:

applying a cold seal cohesive coating in accordance with claim 43 to selected areas of one side of a substrate in the form of a flexible sheet of material;

5 forming said substrate into a package; and

applying pressure to said selected areas to seal said package.

82. The method of claim 81 wherein the step of forming said substrate into a package comprises folding said substrate so that the cohesive coating on different portions of said selected areas of said substrate contact each other.

83. The method of claim 81 wherein the step of forming said substrate into a package comprises contacting different portions of said selected areas of the cohesive coating on said substrate with a separate substrate.